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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
Atty. Dkt. No. 200308989-1

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

On October 11, 2007

Signature

Typed or printed name

Application Number	Filed
10/734,153	12/15/2003

First Named Inventor: Don Milligan

Art Unit	Examiner
2627	L. T. Nguyen

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☐ attorney or agent of record.
Registration number _____

☒ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34
26,874

Signature

William T. Ellis
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Telephone Number

October 11, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

Atty. Dkt. No. 200308989-1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Donald James MILLIGAN et al.
Title:	ELECTROSTATIC ACTUATOR FOR CONTACT PROBE STORAGE DEVICE
Application No.:	10/734,153
Filing Date:	12/15/2003
Examiner:	L. T. Nguyen
Art Unit:	2627
Confirmation No.:	2070

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the **New Pre-Appeal Brief Conference Program**, announced in the July 12, 2005, Office Gazette, this Pre-appeal Brief Request is being filed together with a Notice of Appeal and is being filed before the filing of an Appeal Brief.

Remarks/Arguments begin on page 2 of this document.

REMARKS

The rejections of record are untenable because none of the cited references, either alone or in combination, teach or suggest a composition comprising (a) a second electrode that is supported by a plurality of flexible extension members and (b) a heater disposed on the second electrode, as claimed.

The claims currently under examination, claims 1, 2, 4-8, 10-22 and 24-27, stand rejected as follows:

1. under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 4,998,016 to Nose et al. (hereinafter "Nose").

2. under 35 U.S.C. § 103(a) as allegedly obvious over Nose in view of U.S. Patent No. 6,477,132 to Azuma et al. (hereinafter "Azuma").

None of these references teaches or suggests a second electrode in an electrostatic actuator that "is supported by a plurality of flexible extension members" (e.g. see claim 1) or "a heater disposed on the second electrode, the heater being electrically isolated from the second electrode and electrically connected with a second pair of the flexible extensions which are configured to supply electrical current to the heater" (e.g. see claim 5).

First, Nose teaches a probe unit configured to prevent the distance between the probe and the recording medium from varying. This probe unit includes a substrate, a lower electrode, a piezoelectric layer, upper electrode, insulating film, probe electrode, and probe. Nose also details a bridge-shaped flexible member that consists of the upper electrode layer, the insulating layer, and the probe electrode layer. The bridge-shaped flexible member may include the lower electrode layer as well. Nose teaches that the upper electrode was sputtered onto the substrate with copper as a supporter. The copper was over-etched to form the cavity in the probe unit. Nose does not teach any other support for the upper (or second) electrode.

The Examiner has argued various combinations of components of Nose to teach the plurality of flexible members. First, the Examiner argued that the flexible members were met by the insulating film 5 and the probe electrode 6 (Office Action dated June 12, 2007, page 3, lines 1-4). Figure 1 (and other similar Figures in Nose) clearly show that neither the probe

electrode nor the insulating film provides support to the upper electrode. In this same Office Action, the Examiner also referred to flexible support means for the second electrode as the insulating film 5, the probe electrode 6 and the cavity 8 (page 7, lines 1-4). In a later communication, the Examiner asserted that "Nose does discloses the plurality of flexible support members to the second electrodes (4) by elements (3) and (5) which supports the electrodes by attaching to the electrode (4) (Fig. 1)." (Advisory Action dated August 13, 2007, page 3, lines 2-3)

Thus, the Examiner implicitly acknowledged that the probe electrode does not provide any support to the upper electrode of Nose. Applicants respectfully submit that a cavity is physically incapable of providing support to any structure. Thus, the Examiner's inclusion of the cavity among support means for the electrode is incorrect. However, the Examiner has still referred to both the insulating film (5) and the support (3) of Nose to teach the flexible extension members.

The insulating film of Nose is not a flexible extension member. There is no indication that the insulating film provides support to the second electrode. Rather, as taught in Nose, it insulates the probe and probe electrode from the second electrode. Further, the insulating film of Nose is placed ABOVE the second electrode in the actuator. There is no physical way that the insulating film would be able to support the second electrode in the probe unit of Nose.

The support lacks many of the same features of the members as the insulating film. For most of the embodiments presented in Nose, a support 3 exists that supports the bridge-shaped flexible member, specifically also providing support for the upper electrode on each end of the electrode. Figure 6 shows the support 43 for the upper electrode, such that it also supports the center of the electrode (depicted separately as support 44). This support provides support for the flexible member of the actuator. There is no teaching or suggestion that it is also a flexible member. Also, there is only one support in Nose, in which a cavity was formed (column 6, lines 64-68). There is no teaching or suggestion in Nose of a plurality of supports. Rather, one support is taught in which a cavity was formed so that the support was over-etched.

Further, the support could not be interpreted as a flexible extension member as recited in the dependent claims, which utilize different pairs of flexible extension members: "a first pair of the flexible extensions are configured to apply a voltage to the second electrode," as in claims 4 and 24, and "a second pair of the flexible extensions which are configured to supply electrical current to the heater," as in claims 5, 29 and 25. Even if the insulating film and/or support were incorrectly taken to be flexible support members, there is no teaching in Nose of more than one pair of flexible extension members. The Examiner's current rejections on these claims are inconsistent in terms of the elements utilized to reject the flexible extension members, or do not address the capabilities of flexible extension members as utilized in the invention as claimed.

Second, Nose fails to teach a heater. Specifically, Nose teaches that positional deviations from thermal expansion seldom occurs because of the symmetrical structure of the probe unit (column 12, lines 27-35). The Examiner utilizes inherency to teach a heater, specifically stating that: "It is inherent there is a heater within the bridge to protect the thermal expansion of the probe from damage." However, Nose teaches that the symmetrical structure of the probe unit alleviates concern of lengthwise thermal expansion. Thus, the Examiner's reasoning is incorrect. Further, there is no explicit teaching or suggestion in Nose of a heater, let alone of a heater that is disposed on the second electrode, electrically isolated from the second electrode, and electrically connected with a pair of flexible extension members which are configured to supply electrical current to the heater.

Third, Azuma fails to teach or suggest flexible extension members which support the second electrode, and apply voltage to the second electrode and electrical current to the heater. Rather, Azuma teaches a gate electrode 106 connected to a sensing needle (also a sensing electrode) and two other electrodes 104 and 105 formed in the n-type Si region in the cantilever. (Fig. 1; column 10, lines 7-28) There is no teaching or suggestion in Azuma that electrodes 104 or 105 are supported by flexible members that are also configured to apply a voltage to either of the electrodes or supply electrical current to a heater.

Fourth, Azuma also fails to teach a heater, let alone a heater that is disposed on one of the electrodes 104 or 105. Further, there is no teaching or suggestion in Azuma of a heater

that is electrically isolated from one of the electrodes 104 or 105, or electrically connected with a pair of flexible extension members that are able to supply current to the heater.

One of skill in the art would have been devoid of any motivation and reasonable expectation of success in combining the teachings of Nose and Azuma. Azuma integrates a much more complex system that enable the usage of gates, transistors, and so forth. This much more complex system would not fit within the confines of Nose. For example, Azuma teaches detecting of a change in capacitance by utilizing an electroconductive sensing needle. Nose does not teach the usage of such a sensing needle, and further, would not incorporate such a needle (or the other mechanisms present in Azuma but lacking in Nose) because Nose specifically states that an "object of the present invention is to providing a scanning type of tunnel current detecting device which is compact" (column 2, lines 55-60). Thus, Nose would not incorporate any extra hardware or utility that was not necessary to obtain the goals of his invention (column 2, lines 50-53).

Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Applicants reserve the right to supplement these remarks and, should the application not be allowed, submit additional arguments in an Appeal Brief or at some later stage of prosecution.

At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 C.F.R. § 1.25. Additionally, charge any fees to Deposit Account 08-2025 under 37 C.F.R. § 1.16 through § 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

Respectfully submitted,

Date October 11, 2007
By _____
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